IN THE CLAIMS:

1.(currently amended) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein a first one of the components comprises a substrate and wherein a second one of the components comprises ~~one of a micro-electronic component,~~ an optical component~~, or a micro-mechanical component~~.

2.(withdrawn) A method according to Claim 1 wherein bonding comprises plating the metal on the two positioned components.

3.(withdrawn) A method according to Claim 1 wherein bonding comprises electroplating the metal on the two components.

4.(withdrawn) A method according to Claim 1 wherein bonding comprises electroless plating the metal on the two components.

5.(withdrawn) A method according to Claim 1 wherein bonding comprises providing an electrophoretic coating on the two components wherein the electrophoretic coating comprises the metal and dielectric particles.

6.(currently amended) ~~A method according to Claim 1~~ A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein a first one of the components comprises a substrate and wherein a second one of the components comprises one of a micro-electronic component, an optical component, or a micro-mechanical component; and

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles.

7.(original) A method according to Claim 6 wherein each of the particles of the metal comprises a dielectric material coated with the metal.

8.(original) A method according to Claim 6 wherein bonding the metal particles comprises allowing diffusion between the metal particles.

9.(Previously presented) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles;

wherein bonding the metal particles comprises allowing diffusion between the metal particles; and

wherein the metal comprises a metal having a diffusion rate at room temperature at least as high as a diffusion rate of Indium at room temperature.

10.(original) A method according to Claim 9 wherein the metal comprises Indium.

11.(original) A method according to Claim 8 wherein providing the particles of the metal comprises providing the particles of the metal with a dielectric coating thereon and wherein bonding the metal particles is preceded by rupturing the dielectric coatings.

12.(previously presented) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles;

wherein bonding the metal particles comprises allowing diffusion between the metal particles;

wherein providing the particles of the metal comprises providing the particles of the metal with a dielectric coating thereon and wherein bonding the metal particles is preceded by rupturing the dielectric coatings; and

wherein rupturing the dielectric coatings comprises passing an electric current through the particles.

13.(previously presented) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles;

wherein bonding the metal particles comprises allowing diffusion between the metal particles; and

wherein the metal comprises a first metal with a first rate of diffusion and wherein the particles comprise a coating of a second metal with a second rate of diffusion wherein the second rate of diffusion is lower than the first rate of diffusion.

14.(original) A method according to Claim 13 wherein the first metal comprises Indium and the second material comprises Copper.

15.(previously presented) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles;

wherein bonding the metal particles comprises allowing diffusion between the metal particles; and

wherein providing the particles of the metal comprises providing the particles of the metal with a coating of a solid material that sublimes at a bonding temperature less than the melting temperature of the metal.

16.(original) A method according to Claim 15 wherein the solid material comprises one of naphthalene or carbon dioxide.

17.(original) A method according to Claim 8 wherein providing the particles of the metal comprises providing the particles of the metal with a diffusion barrier thereon and wherein bonding the metal particles is preceded by rupturing the diffusion barrier.

18.(withdrawn) A method according to Claim 6 wherein providing the particles of the metal comprises vibrating the metal particles apart from the components, and after positioning the components, applying the metal particles to the components.

19.(withdrawn) A method according to Claim 6 wherein bonding the metal particles comprises passing an electrical current through the metal particles sufficient to weld interfaces thereof.

20.(withdrawn) A method according to Claim 6 wherein providing the particles comprises providing the particles in a foam and wherein bonding the metal particles comprises collapsing the foam.

21.(withdrawn) A method according to Claim 6 wherein bonding the metal particles comprises introducing a liquid species that amalgamates with the particles at a bonding temperature less than the melting temperature of the metal.

22.(withdrawn) A method according to Claim 21 wherein the metal comprises silver and the liquid species comprises mercury.

23.(withdrawn) A method according to Claim 6 wherein bonding the metal particles comprises corroding the metal particles.

24.(withdrawn) A method according to Claim 23 wherein corroding the metal particles comprises oxidizing the metal particles.

25.(withdrawn) A method according to Claim 24 wherein corroding the metal particles comprises galvanically corroding the metal particles.

26.(withdrawn) A method according to Claim 6 wherein bonding the metal particles comprises applying pressure to the metal particles.

27.(withdrawn) A method according to Claim 6 wherein bonding the metal particles comprises plating a metal thereon.

28.(withdrawn) A method according to Claim 6 wherein bonding the metal particles comprises providing a solution of a second metal on the metal particles to initiate a displacement reaction.

29.(withdrawn) A method according to Claim 1 wherein positioning the components is preceded by:

providing particles of a metal on at least one of the components and vibrating the particles;

wherein positioning the components comprises positioning the components while vibrating the particles; and

wherein bonding the two components comprises ceasing vibrating the particles.

Claims 30-32 (canceled).

33.(withdrawn) A method according to Claim 1 wherein a temperature of the metal is maintained below a melting temperature of the metal while bonding.

Claims 34-67 (canceled).

68.(previously presented) A method according to Claim 9 wherein a first one of the components comprises a substrate.

69.(previously presented) A method according to Claim 68 wherein a second one of the components comprises one of a micro-electronic component, an optical component, or a micro-mechanical component.

70.(previously presented) A method according to Claim 68 wherein the second one of the components comprises an optical component.

71.(previously presented) A method according to Claim 70 wherein the optical component comprises an optical fiber.

72.(previously presented) A method according to Claim 68 wherein the substrate comprises a dam thereon or a well therein.

73.(previously presented) A method according to Claim 12 wherein a first one of the components comprises a substrate.

74.(previously presented) A method according to Claim 73 wherein a second one of the components comprises one of a micro-electronic component, an optical component, or a micro-mechanical component.

75.(previously presented) A method according to Claim 73 wherein the second one of the components comprises an optical component.

76.(previously presented) A method according to Claim 75 wherein the optical component comprises an optical fiber.

77.(previously presented) A method according to Claim 73 wherein the substrate comprises a dam thereon or a well therein.

78.(previously presented) A method according to Claim 13 wherein a first one of the components comprises a substrate.

79.(previously presented) A method according to Claim 78 wherein a second one of the components comprises one of a micro-electronic component, an optical component, or a micro-mechanical component.

80.(previously presented) A method according to Claim 78 wherein the second one of the components comprises an optical component.

81.(previously presented) A method according to Claim 80 wherein the optical component comprises an optical fiber.

82.(previously presented) A method according to Claim 78 wherein the substrate comprises a dam thereon or a well therein.

83.(previously presented) A method according to Claim 15 wherein a first one of the components comprises a substrate.

84.(previously presented) A method according to Claim 83 wherein a second one of the components comprises one of a micro-electronic component, an optical component, or a micro-mechanical component.

85.(previously presented) A method according to Claim 83 wherein the second one of the components comprises an optical component.

86.(previously presented) A method according to Claim 85 wherein the optical component comprises an optical fiber.

87.(previously presented) A method according to Claim 83 wherein the substrate comprises a dam thereon or a well therein.

88.(canceled)

89.(previously presented) A method according to Claim 88 wherein the optical component comprises an optical fiber.

90.(Previously presented) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding, wherein bonding comprises,

providing particles of the metal on the two components wherein the metal has a diffusion rate at room temperature at least as high as a diffusion rate of Indium at room temperature, and

allowing diffusion between the metal particles.

91.(previously presented) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding, wherein bonding comprises,

providing particles of the metal on the two components wherein the particles of the metal have dielectric coatings thereon,

rupturing the dielectric coatings by passing an electric current through the particles,

allowing diffusion between the metal particles.

92.(previously presented) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding, wherein bonding comprises,

providing particles of the metal on the two components wherein the metal comprises a first metal with a first rate of diffusion and wherein the particles comprise a coating of a second metal with a second rate of diffusion wherein the second rate of diffusion is lower than the first rate of diffusion, and

allowing diffusion between the metal particles.

93.(previously presented) A method of bonding two components, the method comprising:

positioning the components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding, wherein bonding comprises,

providing particles of the metal on the two components wherein the particles of the metal comprise a coating of a solid material that sublimes at a bonding temperature less than the melting temperature of the metal, and

allowing diffusion between the metal particles.